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Gadflies biting science communication: engagement, tricksters and ambivalence online

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"the state is like a great and noble steed who is tardy in his motions owing to his very size, and requires to be stirred into life. I am that gadfly which God has given the state and all day long and in all places am always fastening upon you, arousing and persuading and reproaching you" (Socrates, from Plato's Apology (Plato))

"[Socrates] is widely considered to be the most irritating person in history" (Encyclopedia Dramatica)

Abstract

Large-scale online science communication and engagement projects can assume an overly ordered and sterile type of online public space or civil society. Against this, the paper offers a vision of more carnivalesque spaces for online science communication and engagement. Participants in these spaces taking the role of tricksters disrupting the status quo might offer new opportunities for engagement, play and politics online: the online public sphere for discussing science is broken, and we should look for ways to break it better. Acknowledging the limitations of a trickster-like approach, we also consider the ambivalence inherent in carnivalesque play as engagement practice.

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Introduction

Much 'mainstream' science communication, and discussions of the relationship between science and civil society, assume that a loosely Habermasian public sphere and deliberative democracy is an appropriate goal. This has remained the case with influential work on online science communication. For example, Anderson, Brossard, Scheufele, Xenos, and Ladwig (2013) view blog comments as a "space for deliberation" and argue that they do not serve this goal well. We do acknowledge that incivility, abuse and trolling play a role in the frequent failure of online comment spaces to provide a good public sphere for deliberation (around science or other topics) and in the frequent collapse of aspects of online civil society. However, we will also argue that one should therefore not assume that 'bad' tricksters are simply disrupting 'good' online spaces for deliberation: many large-scale online science communication projects are themselves broken from the start and construct unengaging online public spheres (see for example Mendel 2014; Nisbet & Scheufele, 2009).

Science communication online can fulfil a number of roles. Some of the goals of science communication might be related to deliberation or participatory democracy. However, in this commentary we challenge any deterministic claim that online science communication *should* only be this. 'Rational' spaces for participatory democracy are not the only – and, we would suggest, often not the most effective – means of engagement through online science communication. When writers and researchers criticise online spaces for discussing science because of their noise and arguments and fights this sometimes rather misses the point: in the case of some lively, active spaces this is like going to a carnival and complaining that it is too loud and disordered to allow for 'rational' debate. Instead, we will argue for a reconceptualization of what online public spaces could be and a renewed sense of purpose for online science communication.

In order to offer alternatives, we will turn to the trickster archetype (Bassil-Morozow, 2015) as a far more playful possibility. We will use Deleuze and Guattari's (1988) work around pragmatics in order to think through how science communication might be put to use, and draw on Phillips and Milner's (2017) work to reflect on ambivalent aspects of this of these online activities. We will use the trickster as a concept through which we can understand, theorise and advance the way these disruptions are being performed.

This commentary draws on our work on the *Science: So What? So Everything* engagement campaign (the UK government's then Department of Innovation, Universities and Skills project intended this campaign to stir public enthusiasm for STEM subjects) (Mendel 2014; Riesch and Mendel 2014; Mendel and Riesch 2015). We looked at *Science: So What*, and some responses to it, and contrasted this with other types of online engagement (see Mendel 2014).

This commentary has also sprung out of our participation in, engagement with and research about the badscience blogging network (Riesch and Mendel 2014; Mendel and Riesch 2015).[1] We were struck by how effectively this network was able to engage with a substantial audience through using humour, playfulness and a less hierarchical networked structure. The badscience bloggers campaigned on various issues but, rather than aiming solely at 'rational' deliberation, more often echoed the Nietzschean, Dionysian impulse that Coleman (2014, p. 532) finds in Anonymous: "Not by wrath does one kill but by laughter". The badscience bloggers' challenge to what is seen as bad science often came with jokes and mockery rather than with the more serious approach found in much science communication (and in much of the broader Skeptic community) (Riesch and Mendel 2015). This commentary has been informed – or, perhaps, seduced – by trickster-like aspects of this blogging network as we try to conceptualise how this approach can potentially shake up our notions of what good science communication could be. As such, this work is influenced by the type of (auto)ethnographic "remix" that Phillips and Milner (2007, p. 19) describe: as scholars and people, these are "texts and traditions that we…have personally engaged with and enjoyed".

The (online) public sphere is broken, so let's break it better

[1] The badscience bloggers formed a loose network out of commentators (including the authors) on the website and later webforum of UK science writer Ben Goldacre from around 2007 onwards, many of whom maintained their own blogs. As we describe in our previous work (Riesch and Mendel 2014), this community developed a set of social norms and values which among others foregrounded both direct action for science related causes and a whimsical, trickster-like, attitude towards engagement with each other and outsiders. The network had some striking impacts, influencing among others UK Green Party science policy and the course of the British Association of Chiropractors vs. Simon Singh libel proceedings (Robbins 2010).

Rather than online and social media discussions of science being a deviation from an ideal pre-existing space for engagement, we instead propose to think in terms of different types of problems, limitations and exclusions. Rather than thinking about (very real and harmful) problems such as abuse and trolling breaking online spaces for engagement with science, we would view these spaces as already broken in many ways. The question then becomes one of how they can be broken *better*.

The *Science: So What? So Everything* campaign was a science communication campaign from the UK's then Department for Business Innovation and Skills (BIS) that "aimed to get readers to "look again at science: what is it doing for us already? How is it going to drive us to a better future? Why not take a look around, and see how science is touching you"" (Mendel 2014: 57). It particularly aimed to inspire young people to pursue science-related careers (Mendel 2014: 57-8). This was a substantial campaign, backed by a £1m-plus budget and drawing on high-profile support including that of the UK's then Prime Minister. The campaign achieved significant coverage in 'mainstream' media: for example, looking at a report on future jobs, "Kindred – the Public Relations (PR) agency behind the campaign – assessed impact by noting that the report achieved "178 pieces of coverage across national, regional, consumer and online media … A combined OTS [opportunities to see] of 60,985,597 … An AEV [Advertising Equivalent Value] of £2,248,866"" (Mendel 2014: 58). However, some online aspects of the campaign were rather more limited. The campaign generated under 8,000 website hits per day with its launch publicity (which was itself a significant increase on prior to that); this is very limited for a campaign at this scale (Holmes and Mendel 2010). While there was some online discussion with the public on Twitter early on, the type of online discussion about why science matters in our lives that might have been hoped for did not emerge, and there certainly was not the development of a Habermasian public sphere for 'rational' debate. Where further online discussion did ultimately emerge, this was more focussed around criticising aspects of the *Science: So What* campaign – such as a weak report on future jobs (see Mendel 2014).

Engagement with *Science: So What* (which included these authors) became livelier as it also became more conflictual, louder and more playful. We saw that "social media responses were able to offer relatively fast and in-depth challenges to seemingly hasty claims in the report: for example, to over-optimistic claims about nano-technology and medicine"

(Mendel 2014: 59). An ambivalent type of play was important here: for example, the blogger James Hayton (2010) points out that he "just wanted to find where the idea of sub-atomic machines had come from, poke fun at it, and go about my business"; however, this led him into a more substantive critique. Mendel and Holmes (2010) blogged the lack of "participatory joy" in *Science: So What* and argued instead for the need to find "new ways to understand, engage with and change the world". Rather than moving towards any 'rational' consensus, the fun of joking about, mocking and arguing with a large science communication campaign was more engaging than the online aspects of the campaign itself.[2] Multiple interlocutors (including these authors), combining this drive for play and for poking the campaign with discussion of some of the more substantive issues that their play drew them into, helped to form a swarm of ambivalent gadflies.

Such play and swarms of gadflies have played out in other science-related contexts, too. For example, one might note the emergence of the #distractlinglysexy Twitter hashtag in response to the senior scientist Tim Hunt's comments about gender in the lab (see Morello 2015). Women working in science tweeted selfies and other comments, in order to humorously challenge the idea that they were a distraction in the lab: disrupting conventional scientific hierarchies for progressive political purposes. More ambivalently, one might note the response to the UK's National Environment Research Council's (NERC) decision to allow the public to name their new boat: much discussion, joking and arguing led to a public vote to name it Boaty McBoatface, and followed NERC's decision not to use this name for the boat (Phillips and Milner 2017: 164-9).

While loud, playful online discussions of science might make some feel melancholic about the loss of imagined science-related online spaces for an idealised participatory democracy or deliberation, we would question to what extent these spaces actually existed in the first place. It is important to remember both where science communication/Public Understanding of Science (PUS) have come from and where we currently are. For all the rhetoric about a move from PUS to PEST (public *engagement* with science and technology, rather than public *understanding*), there is still frustration that the rhetoric of open

[2] Such play did not exclude more conventional forms of engagement with the campaign, however. The authors (and some others who were engaged in critical responses to the campaign) sought to contribute to the campaign: for example, through participating in an online forum set up to discuss the campaign constructively, and through meetings with some involved in the campaign.

participatory engagement rarely matches with reality (Irwin, 2014). Part of the problem here is that whatever idealised engagement is envisaged, the spaces – online or offline – in which it happens are frequently set up, controlled, managed and/or owned by groups or individuals. These may then have limiting and, often, overly prescriptive ideas of what constitutes permissible discourse. Online engagement with science may sometimes be noisy or even uncivil and may breach some ideas of permissible discourse, but this does not just take us away from an idealised type of engagement that existed prior to the noise of social media; instead, this is a move from one imperfect situation to another.

We would emphasise that some aspects of online discussions of science are mostly or entirely negative and should be robustly challenged – for example, the fact that women writing about science online often face threats of sexual violence is clearly extremely negative (see Riesch and Mendel 2014 and Mendel and Riesch 2015 for further discussion of this). The use of an (intended) humorous manner does not make online harassment or threats of violence any less objectionable, and may in some cases amplify the harm caused.

Tricksters: trolling science communication?

In Bassil-Morozow's (2015) words, the 'trickster' is a 'psycho-anthropological' concept (an 'archetype' for Jung) that appears as a recurrent figure in mythology. Frequently mentioned examples are the Coyote in Native American mythology or Anansi in West African mythology. Tricksters appear often in creation myths where they provide often paradoxical and whimsical explanations of why the world is as it is (Weaver and Mora, 2016, p. 480), but they also appear more widely in fairy-tales, or more modern narratives such as movies and novels. Trickster narratives share themes and motifs which Bassil-Morozow summarises among others as the trickster's liminality and boundary breaking behaviour, licentiousness, shape-shifting and scatological references. Tricksters are often morally ambiguous, acting out of their own interests but also often (but not necessarily) affecting the world positively as a result. Tricksters, as the name suggests, use tricks, deception and subversion in order to advance their goals.

Trickster discourse, as Weaver and Mora (2016, p.480) describe it, "is that which can affect the social through unorthodox and possibly subversive means". This leads Weaver, Mora

and the contributors to their special issue to explore tricksters in contemporary humour studies. The trickster can also be used as an analytical tool to make sense of online trolling and its social/political positioning, for example by Phillips (2015). Phillips (2015, p. 126-8) highlights the philosophical appeal of Socrates to certain (anti)social groupings of trolls. As she (p. 126) notes, Encyclopedia Dramatica (a famous 'trolling' text) quotes Socrates' argument that "I am that gadfly which God has attached to the state, and all day long and in all places am always fastening upon you, arousing and persuading and reproaching you". Encyclopedia Dramatica further argues that Socrates is "widely considered to be the most irritating person in history". We observed that those acting as tricksters or trolls offering creative and critical responses to some 'mainstream' science communication projects were not always especially well-received by the project teams – and, indeed, may well have been frustrating for them. For example, the *Science: So What?* project attracted numerous critical responses from science bloggers and others, and did not initially take all of these well (Holmes and Mendel 2010; Mendel 2014). It is quite possible that, for example, the *Science: So What?* team sometimes felt themselves to be beset by gadflies when facing critical responses from bloggers (including one of these authors). However, we would argue that this is precisely what some 'mainstream' science communication projects need – to be beset by biting, irritating swarms of gadflies, in order to challenge projects that can be overcentralized, unwieldy, dull and expensive. It is in the spirit of such a swarm of gadflies – and in an ambivalent celebration of irritating, stinging, itching approaches to the status quo – that we present this paper.

The trickster concept offers a way to understand the value of these gadflies. Though most tricksters, trolls and commentators of course will not be as insightful as Socrates, their function as the liminal, outsider and often impolite disruptors of conventional science communication discourses can serve the useful purpose of shaking things up, disrupting complacency and revealing unimagined shortcomings, not necessarily through any clear moral purpose behind the criticism, but for the enjoyment of making it. For Massumi (1988, p. xii), in Deleuze and Guattari's work a concept is a brick that might "be used to build the courthouse of reason [or] thrown through the window". Science communication and PUS are rich sources of concepts. Drawing on Deleuze and Guattari's work, we would hope to

provoke more use of science communications concepts to break things, trickster-like, as well as building new and different spaces of science communication.

Ambivalence

Writing about a range of "weird" online behaviours, Phillips and Milner (2017, p. 10) emphasise the importance of ambivalence, "implying tension, and often fraught tension, between opposites". Looking at trickster-like play around (professed) fandom for mass murderers, they suggest (2017, p. 11) that "[e]ven playful fawning over mass shooters could be seen from several co-occurring vantage points, from excessive attachment to excessive dissociation to a pointed satire of… news coverage [or] Maybe the people who post Columbine sweetheart photos are just assh*les. Maybe all of the above." Maybe some of those writing playful critiques of and jokes about *Science: So What* were involved in a critique of the limitations of government science communication (or broader government practices); maybe they were wanting to point and laugh at what seemed to be a weak campaign; maybe it was a social thing; maybe it was a swarm of gadflies biting at the campaign in order to spur it on to different things; maybe they (or we) were something else… Or maybe all of the above. We will try to retain some of this ambivalence below, rather than falling into any complete celebration or rejection of the role of tricksters in online science communication.

Biting science communication: beyond the trickster archetype

While important, the archetype of the trickster is not, in itself, sufficient. Indeed, Coleman (2014, p. 77) acknowledges that the trickster is "one heuristic—certainly not the only or primary one", for understanding trolls and Anonymous. Žižek (2012, p. 189) offers an important challenge to the perceived role of the trickster today: "With the full deployment of capitalism…it is the predominant 'normal' life itself that…gets carnivalised…it is the critique of capitalism, from a stable ethical position, that more and more appears today as an exception". As Phillips (2015, p. 11) argues, online tricksters such as 'trolls' can thus be viewed as "par for the mainstream cultural course" instead of something that lies outside of

mainstream culture. Rather than simply accepting the 'mainstream cultural course', we would draw again on hopes of "science for the people" and the "radicalisation of science" (Rose and Rose 1972).

We should thus be ambivalent about tricksters: rather than helping to break online spaces better, there is a real risk that trickster-type approaches might be too easily absorbed into – or amplify many negative aspects of – the status quo. We should also remain ambivalent about our own use of the word 'troll': we acknowledge the risk that "the term tends to minimize the negative effects of the worst kinds of online behaviors" (Phillips and Milner 2017, p. 8). While swarms of biting gadflies might help to achieve change, within or beyond online discussions of science, they can also be destructive in extremely regressive ways.

While we do not accept that a broadly Habermasian public sphere is either a desirable or actually-existing space for online science communication, we would also argue for a move beyond 'just' relying on the references to tricksters which are often used to capture more playful online discourses. Looking at different strategies will help to think about how this might play out. Here, we would return again to the approach suggested by Phillips and Milner (2017, p. 19), where we are both studying and engaging with and enjoying some of the behaviours we discuss: aiming for work that "coolly stands apart from and defiantly inhabits the worlds it describes".

To begin with, one might build on carnivalesque challenges to big, centralised online science communication projects in order that these networks of tricksters can become part of a long-term change in the status quo. Taking the trickster seriously might let us challenge some of the problems of official online science communication and the types of civil society associated with it. However, this beginning risks just making the injustices of the status quo more tolerable – allowing some new types of enjoyment to be had while remaining within the constraints of the current system. In his influential analysis of Renaissance-era carnivals, Bakhtin (1984) posited just this as one of the institutional effects of carnival: that it allowed people to let off steam and thus reinforce, rather than challenge, hierarchies. A second type of challenge, then, would entail a fuller move beyond the figure of the trickster – and, instead, seeking stable ethical and political positions from which to criticise large, government- or corporation-led science communication projects. If, as suggested above, concepts of science, communication and engagement are bricks that can "be used to build

the courthouse of reason [or] thrown through the window" (Massumi, 1988, p. xii) then it is high time to hear the sound of breaking glass.

The challenges that tricksters pose to mainstream science communication can be funny and rewarding and engaging in themselves; they might also facilitate politically powerful moves beyond the trickster figure; or it might just be people being uncivil for the sake of it. These challenges can also be all of the above.

Conclusions

Science communication now takes place in a context where trolling and ambivalence are intimately linked to mainstream culture (Phillips 2015; Phillips and Milner 2017). We would argue that this is also – maybe particularly – the case in online science communication and engagement. In order to build fruitful spaces for engagement, we should look to take advantage of the interactive potential of (somewhat) new technologies and spaces and resist the tendency for our work as scholars being used to further close off or 'clean up' online spaces of science communication and engagement (see Walsh, 2015, p. 10). To do so, it is important to move beyond a focus on orderly online spaces for deliberation: we should look instead at opportunities to play in and to further break these already-broken spaces. More carnivalesque approaches might offer much more enjoyable and fruitful spaces in which to participate; we might also move beyond such approaches in order to build stable ethical and political positions from which to further disrupt the status quo.

To go from our discussion of tricksters to argue for radical moves to shatter the status quo in science communication is, admittedly, something of a stretch. This paper has sprung from our own participation in online networks such as badscience, discussing, arguing and joking about science (Riesch and Mendel 2014; Mendel and Riesch 2015) and we have, to an extent, been infected ourselves by this trickster approach. We certainly would not claim that there is any deterministic path to policy change and political change here. However, by drawing on and moving beyond the trickster archetype there might be a lot of fun to be had in building carnivalesque spaces for public engagement; moving beyond this might open up opportunities for shattering the status quo and (re)building a radical science communication that includes the whimsical and carnivalesque alongside earnest political contributions. To

draw again on Phillips and Milner's (2017, p. 11) work, we will end on a note that echoes the ambivalent internet this work has sprung from: this paper could be read as a radical challenge to 'mainstream' science communication; it could be a joke; we might be terrible scholars and horrible people. Or, maybe, all of the above.

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